

How I Am Learning Ruby on Rails Part I

This is the first post in what I am expecting to be a lengthy monologue centered around learning web programming with Ruby on Rails.

My Development Environment

Item	Detail OS	Windows 8.1 Hardware	Dell Optiplex 760, 4.00 GB of RAM Programming Software	JetBrains Ruby Mine (IDE Software) Notepad2
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Preflight – ELI5 What is Ruby on Rails?

Excerpt from the Documentation for rails (3.0.0):

Rails is a web-application framework that includes everything needed to create database-backed web applications according to the Model-View-Control pattern.

This pattern splits the view (also called the presentation) into “dumb” templates that are primarily responsible for inserting pre-built data in between HTML tags. The model contains the “smart” domain objects (such as Account, Product, Person, Post) that holds all the business logic and knows how to persist themselves to a database. The controller handles the incoming requests

(such as Save New Account, Update Product, Show Post) by manipulating the model and directing data to the view.

In Rails, the model is handled by what's called an object-relational mapping layer entitled Active Record. This layer allows you to present the data from database rows as objects and embellish these data objects with business logic methods. You can read more about Active Record in <link:files/vendor/rails/activerecord/README.html>.

The controller and view are handled by the Action Pack, which handles both layers by its two parts: Action View and Action Controller. These two layers are bundled in a single package due to their heavy interdependence. This is unlike the relationship between the Active Record and Action Pack that is much more separate. Each of these packages can be used independently outside of Rails. You can read more about Action Pack in <link:files/vendor/rails/actionpack/README.html>.

Day 1: Read the f#king Manual – Chapter 1 of The Ruby On Rails Tutorial



The manual I chose to read: ***The Ruby on Rails Tutorial*** by

Michael Hartl.

The author was kind enough to put the material online for free reading.

see: <http://www.railstutorial.org/>

Things I learned today: The linux sudo command stands for "substitute user do" **0_0**

In my relatively short time spelunking into the *nix commandline, I never bothered to look up the etymology behind the executable.

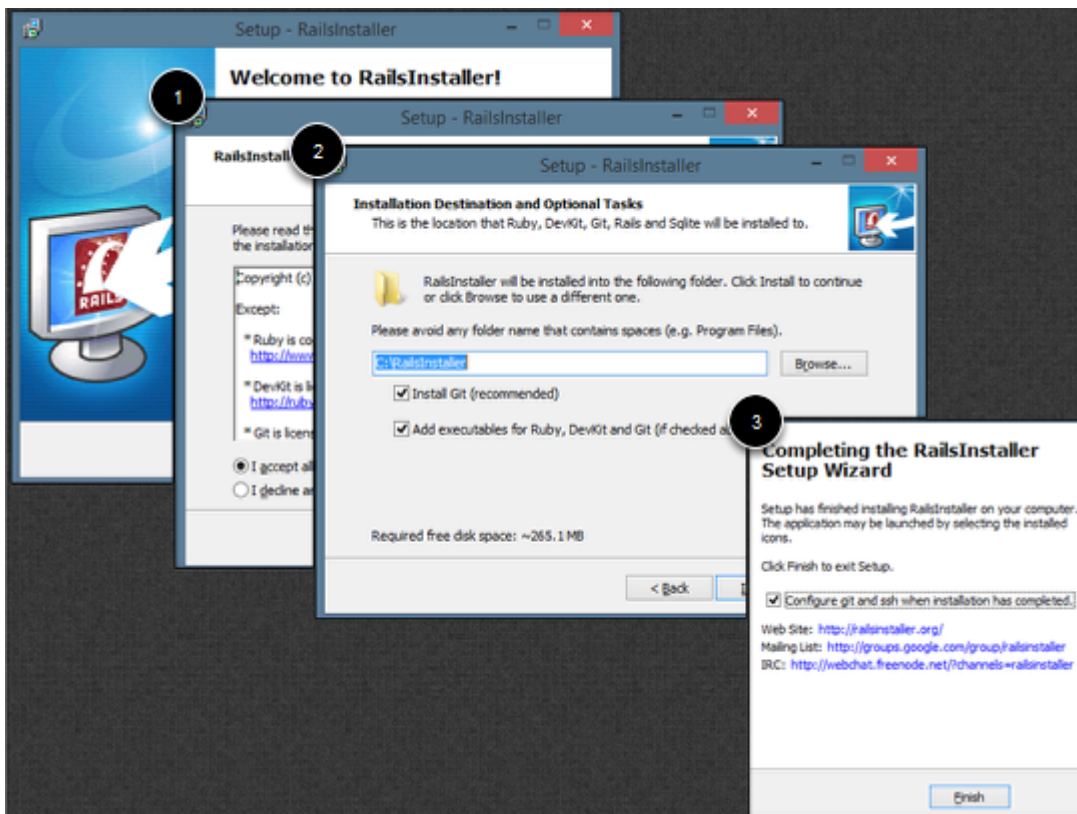
I think the term merits a line in a Wikipedia article, perhaps this one: [List of computer term etymologies](#)

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Day 2: Install Ruby & Rails, and Git

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Install Ruby & Rails



Preflight:

The author recommends I install Ruby 1.9.3 if I'm on Windows, so that's what I'm going to do.

Weblink: <http://railsinstaller.org/en>

I downloaded the file railsinstaller-2.2.3.exe

From the website – Packages included are:

Ruby 1.9.3

Rails 3.2

Bundler

Git

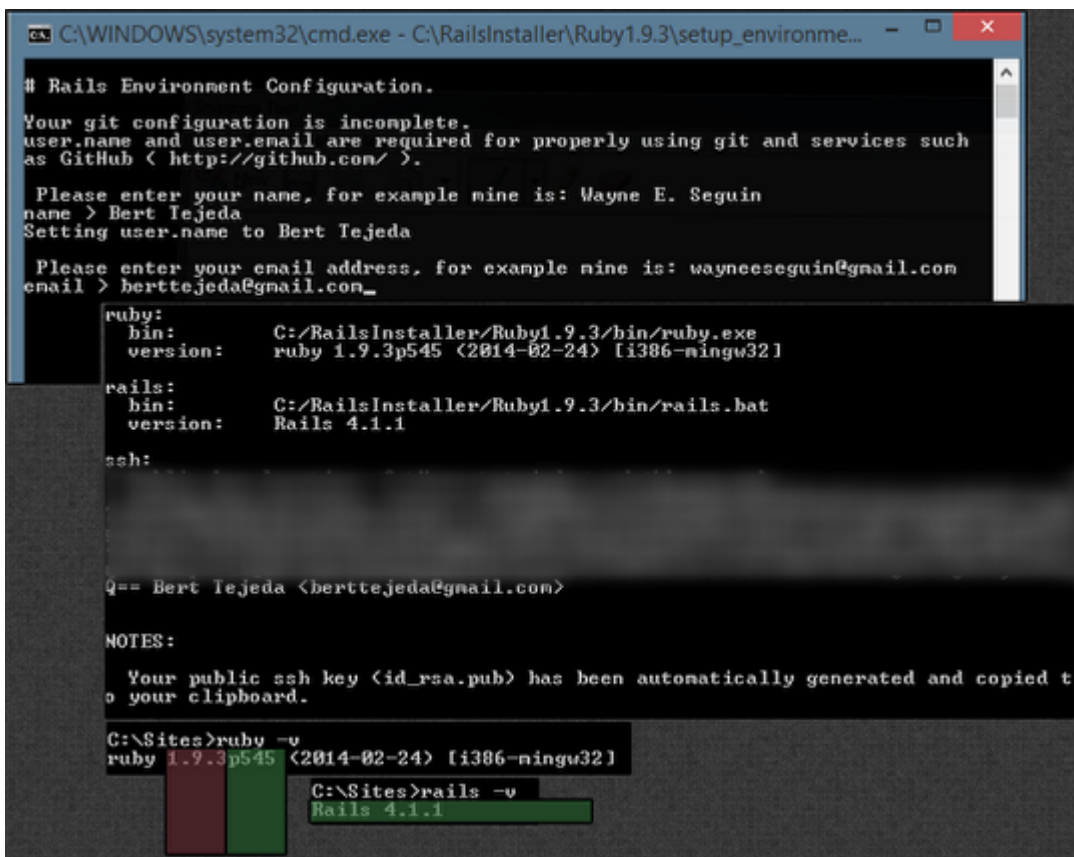
Sqlite

TinyTDS

SQL Server Support

DevKit

Configure Git, Verify Ruby & Rails



```
C:\WINDOWS\system32\cmd.exe - C:\RailsInstaller\Ruby1.9.3\setup_environment...  
# Rails Environment Configuration.  
Your git configuration is incomplete.  
user.name and user.email are required for properly using git and services such  
as GitHub < http://github.com/ >.  
  
Please enter your name, for example mine is: Wayne E. Seguin  
name > Bert Tejada  
Setting user.name to Bert Tejada  
  
Please enter your email address, for example mine is: wayneeseguin@gmail.com  
email > berttejeda@gmail.com_  
  
ruby:  
  bin:      C:/RailsInstaller/Ruby1.9.3/bin/ruby.exe  
  version:  ruby 1.9.3p545 (2014-02-24) [i386-mingw32]  
  
rails:  
  bin:      C:/RailsInstaller/Ruby1.9.3/bin/rails.bat  
  version:  Rails 4.1.1  
  
ssh:  
  
Q== Bert Tejada <berttejeda@gmail.com>  
  
NOTES:  
Your public ssh key (id_rsa.pub) has been automatically generated and copied to  
your clipboard.  
  
C:\Sites>ruby -v  
ruby 1.9.3p545 (2014-02-24) [i386-mingw32]  
  
C:\Sites>rails -v  
Rails 4.1.1
```

As you can see in the illustration, I've configured Git security keys by following the prompts and entering my name and email address.

I also verified my ruby version:

```
ruby -v
```

as well as my rails version:

```
rails -v
```

Take note: the **p545** suffix in the ruby version stands for the patch number.

I don't believe it's critical for this number to match the author's ruby environment.

Configure & Install Development Environment

The author recommends Sublime Text 2 for the development environment.

Download here: <http://www.sublimetext.com/2>

From the website: *"Sublime Text 2 may be downloaded and evaluated for free, however a license must be purchased for continued use. There is currently no enforced time limit for the evaluation."*

I gave Sublime a try a few months ago. It's very useful, but I prefer JetBrains RubyMine: <http://www.jetbrains.com/ruby/>

It's not a free program, but you are allowed 30 days to evaluate.

Since I'm a student at Pennsylvania State University, I qualify for the \$29.00 Academic License ☐

Before you begin working with JetBrains RubyMine, read this: [Using RubyMine IDE for Hartl's Rails Tutorial](#)

The author's name is David Loeffler, and he gears the information for OSX Users, so I'll compile some notes for Windows Users since that's my platform.

I'll begin with a table of contents like he does, substituting Windows-centric terms and applications where need be:

pik and Ruby Installation

Setting up RubyMine IDE

Version Control with Git using RubyMine
[Running Spork Server inside RubyMine]
Convert to PostgreSQL for development and testing
Data Model for Sample App starting in chapter 6.
Rails Console running inside RubyMine
Extras
Additional References

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Installing pik

From the [github](#) project page “... pik is a tool to manage multiple versions of ruby on Windows. It can be used from the Windows command line (cmd.exe), Windows PowerShell, or Git Bash”

Requirements are listed as:

Requirement	Description gems: rake, isolate	exerb-mingw	Exerb is a program that converts Ruby scripts and extension libraries into equivalent Microsoft Windows executables, which can execute alone and independently. upx	UPX is a free, portable, extendable, high-performance executable packer for several executable formats.
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With that, let's see about installing the tool.

1. Ensure you have the requisite gems installed:

```
gem list isolate
```

```
gem list rake
```

If the commands return nothing, you'll need to install the gems

```
gem install isolate  
gem install rake
```

2. Install exerb-mingw

Launch Windows CMD

Change dir to your workspace (could be any folder, just be consistent, e.g. C:\MyRuby)

Clone the exerb-mingw Github project

```
git clone git://github.com/snaury/exerb-mingw.git  
cd exerb-mingw  
ruby setup.rb all
```

For my environment, the installation resulted in a bunch of objects being created under C:\RailsInstaller\Ruby1.9.3

Sample Output:

```
mkdir -p C:/RailsInstaller/Ruby1.9.3/bin/  
install exerb C:/RailsInstaller/Ruby1.9.3/bin/  
install exerb.bat C:/RailsInstaller/Ruby1.9.3/bin/  
install mkexy C:/RailsInstaller/Ruby1.9.3/bin/  
install mkexy.bat C:/RailsInstaller/Ruby1.9.3/bin/  
...  
mkdir -p C:/RailsInstaller/Ruby1.9.3/lib/ruby/site_ruby/1.9.1/  
..mkdir -p C:/RailsInstaller/Ruby1.9
```

Some Notes:

setup.rb is a generic installer for ruby scripts and libraries. You can use setup.rb to install your any ruby programs.

3. Install upx

Navigate to the SourceForge page and download the Windows Binary

The file I obtained was *upx391w.zip*

From this archive, copy the upx.exe executable to a location

accessible via your windows *PATH* environmental variable
(machine scope is best)

4. Install Pik

```
pik_install c:\externaltools\bin
```

Sample Output

```
Thank you for using pik.  
mkdir -p c:\bin  
mkdir -p C:\Users\myusername\.pik  
Installing to c:\externaltools\bin  
cp  
C:/RailsInstaller/Ruby1.9.3/lib/ruby/gems/1.9.1/gems/pik-0.2.8  
/tools/pik_runner.exe c:\externaltools\bin  
cp  
C:/RailsInstaller/Ruby1.9.3/lib/ruby/gems/1.9.1/gems/pik-0.2.8  
/tools/pik.bat c:\externaltools\bin  
cp  
C:/RailsInstaller/Ruby1.9.3/lib/ruby/gems/1.9.1/gems/pik-0.2.8  
/tools/pik.ps1 c:\externaltools\bin  
creating C:\Users\myusername\.pik\.pikrc  
pik is installed  
if you want to use pik with git bash, add the following line  
to your ~/.bashrc:  
[[ -s $USERPROFILE/.pik/.pikrc ]] && source  
$USERPROFILE/.pik/.pikrc
```

Setting Up RubyMine IDE

Switch ruby version:

```
pik use 1.9.3 p545
```

Verify active ruby version:

```
pik list
```

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Appendix

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Command Cheatsheet

Linux Commands

Command	Description rvm list gemsets	rails new myapp	(where myapp is the application name) – At the command prompt, create a new Rails application cd myapp; rails server (run with -help for options)	Change directory to myapp and start the web server. Go to http://localhost:3000/ and you'll see "Welcome aboard: You're riding Ruby on Rails!"
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Debugging Rails

== Debugging Rails

Sometimes your application goes wrong. Fortunately there are a lot of tools that will help you debug it and get it back on the rails.

First area to check is the application log files. Have "tail -f" commands running on the server.log and development.log. Rails will automatically display debugging and runtime information to these files. Debugging

info will also be shown in the browser on requests from 127.0.0.1.

You can also log your own messages directly into the log file from your code using the Ruby logger class from inside your controllers. Example:

```
class WeblogController < ActionController::Base
  def destroy
    @weblog = Weblog.find(params[:id])
    @weblog.destroy
    logger.info("#{Time.now} Destroyed Weblog ID ##{@weblog.id}!")
  end
end
```

The result will be a message in your log file along the lines of:

```
Mon Oct 08 14:22:29 +1000 2007 Destroyed Weblog ID #1!
```

More information on how to use the logger is at <http://www.ruby-doc.org/core/>

Also, Ruby documentation can be found at <http://www.ruby-lang.org/>. There are several books available online as well:

- * [Programming Ruby:](http://www.ruby-doc.org/docs/ProgrammingRuby/) <http://www.ruby-doc.org/docs/ProgrammingRuby/> (Pickaxe)
- * [Learn to Program:](http://pine.fm/LearnToProgram/) <http://pine.fm/LearnToProgram/> (a beginners guide)

These two books will bring you up to speed on the Ruby language and also on programming in general.

== Debugger

Debugger support is available through the debugger command when you start your Mongrel or WEBrick server with `-debugger`. This means that you can break out of execution at any point in the code, investigate and change the model, and then, resume execution! You need to install `ruby-debug` to run the server in debugging mode. With `gems`, use `sudo gem install ruby-debug`. Example:

```
class WeblogController < ActionController::Base
  def index
    @posts = Post.find(:all)
    debugger
  end
end
```

So the controller will accept the action, run the first line, then present you with a IRB prompt in the server window. Here you can do things like:

```
>> @posts.inspect
=> "[#<Post:0x14a6be8
@attributes={"title"=>nil, "body"=>nil, "id"=>"1"}>,
#<Post:0x14a6620
@attributes={"title"=>"Rails", "body"=>"Only ten..",
"id"=>"2"}>]"
>> @posts.first.title = "hello from a debugger"
=> "hello from a debugger"
```

...and even better, you can examine how your runtime objects actually work:

```
>> f = @posts.first
=> #<Post:0x13630c4 @attributes={"title"=>nil, "body"=>nil,
"id"=>"1"}>
```

```
>> f.
```

```
Display all 152 possibilities? (y or n)
```

Finally, when you're ready to resume execution, you can enter "cont".

== Console

The console is a Ruby shell, which allows you to interact with your application's domain model. Here you'll have all parts of the application configured, just like it is when the application is running. You can inspect domain models, change values, and save to the database. Starting the script without arguments will launch it in the development environment.

To start the console, run `rails console` from the application directory.

Options:

- * Passing the `-s, -sandbox` argument will rollback any modifications made to the database.
- * Passing an environment name as an argument will load the corresponding environment. Example: `rails console production`.

To reload your controllers and models after launching the console run `reload!`

More information about irb can be found at:

link:<http://www.rubycentral.com/pickaxe/irb.html>

== dbconsole

You can go to the command line of your database directly through `rails dbconsole`. You would be connected to the database with the credentials defined in `database.yml`. Starting the script without arguments will connect you to the development database. Passing an argument will connect you to a different database, like `rails dbconsole production`. Currently works for MySQL, PostgreSQL and SQLite 3.

== Description of Contents

The default directory structure of a generated Ruby on Rails application:

```
|– app
| |– controllers
| |– helpers
| |– mailers
| |– models
| `– views
| `– layouts
|– config
| |– environments
| |– initializers
| `– locales
|– db
|– doc
|– lib
| `– tasks
|– log
|– public
```

- | |- images
- | |- javascripts
- | `-- stylesheets
- |- script
- |- test
 - | |- fixtures
 - | |- functional
 - | |- integration
 - | |- performance
 - | `-- unit
- |- tmp
 - | |- cache
 - | |- pids
 - | |- sessions
 - | `-- sockets
- `-- vendor
- `-- plugins

app

Holds all the code that's specific to this particular application.

app/controllers

Holds controllers that should be named like `weblogs_controller.rb` for automated URL mapping. All controllers should descend from `ApplicationController` which itself descends from `ActionController::Base`.

app/models

Holds models that should be named like `post.rb`. Models descend from `ActiveRecord::Base` by default.

app/views

Holds the template files for the view that should be named like `weblogs/index.html.erb` for the `WeblogsController#index` action.

All views use
eRuby syntax by default.

app/views/layouts

Holds the template files for layouts to be used with views.

This models the

common header/footer method of wrapping views. In your views,
define a layout

using the `layout :default` and create a file named
default.html.erb.

Inside default.html.erb, call `<% yield %>` to render the view
using this

layout.

app/helpers

Holds view helpers that should be named like
weblogs_helper.rb. These are

generated for you automatically when using generators for
controllers.

Helpers can be used to wrap functionality for your views into
methods.

config

Configuration files for the Rails environment, the routing
map, the database,

and other dependencies.

db

Contains the database schema in schema.rb. db/migrate contains
all the

sequence of Migrations for your schema.

doc

This directory is where your application documentation will be
stored when

generated using `rake doc:app`

lib

Application specific libraries. Basically, any kind of custom

code that doesn't belong under controllers, models, or helpers. This directory is in the load path.

public

The directory available for the web server. Contains subdirectories for images, stylesheets, and javascripts. Also contains the dispatchers and the default HTML files. This should be set as the DOCUMENT_ROOT of your web server.

script

Helper scripts for automation and generation.

test

Unit and functional tests along with fixtures. When using the rails generate command, template test files will be generated for you and placed in this directory.

vendor

External libraries that the application depends on. Also includes the plugins subdirectory. If the app has frozen rails, those gems also go here, under vendor/rails/. This directory is in the load path.

Sources

Sources

